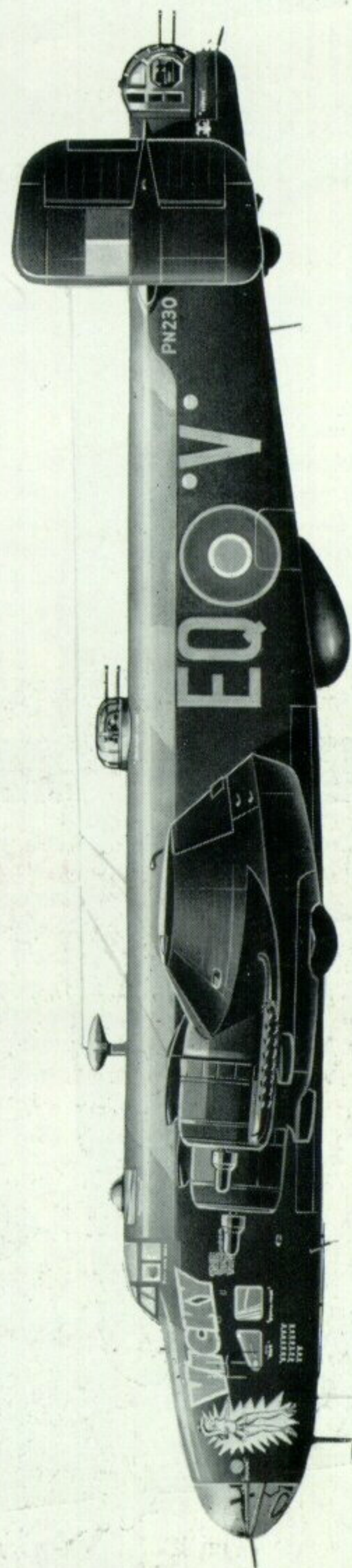


PROFILE PUBLICATIONS

The Handley Page Halifax B.III, VI, VII

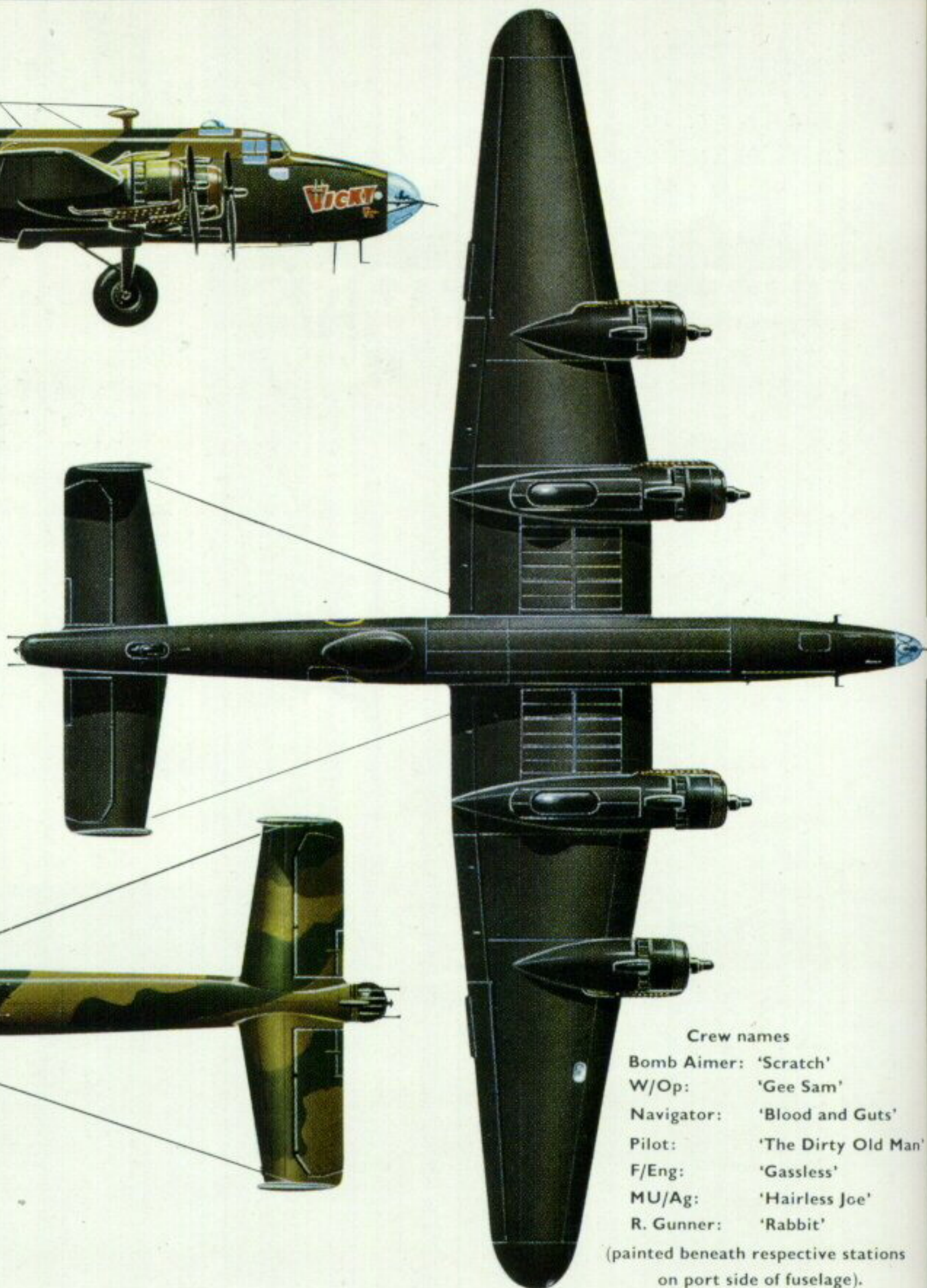
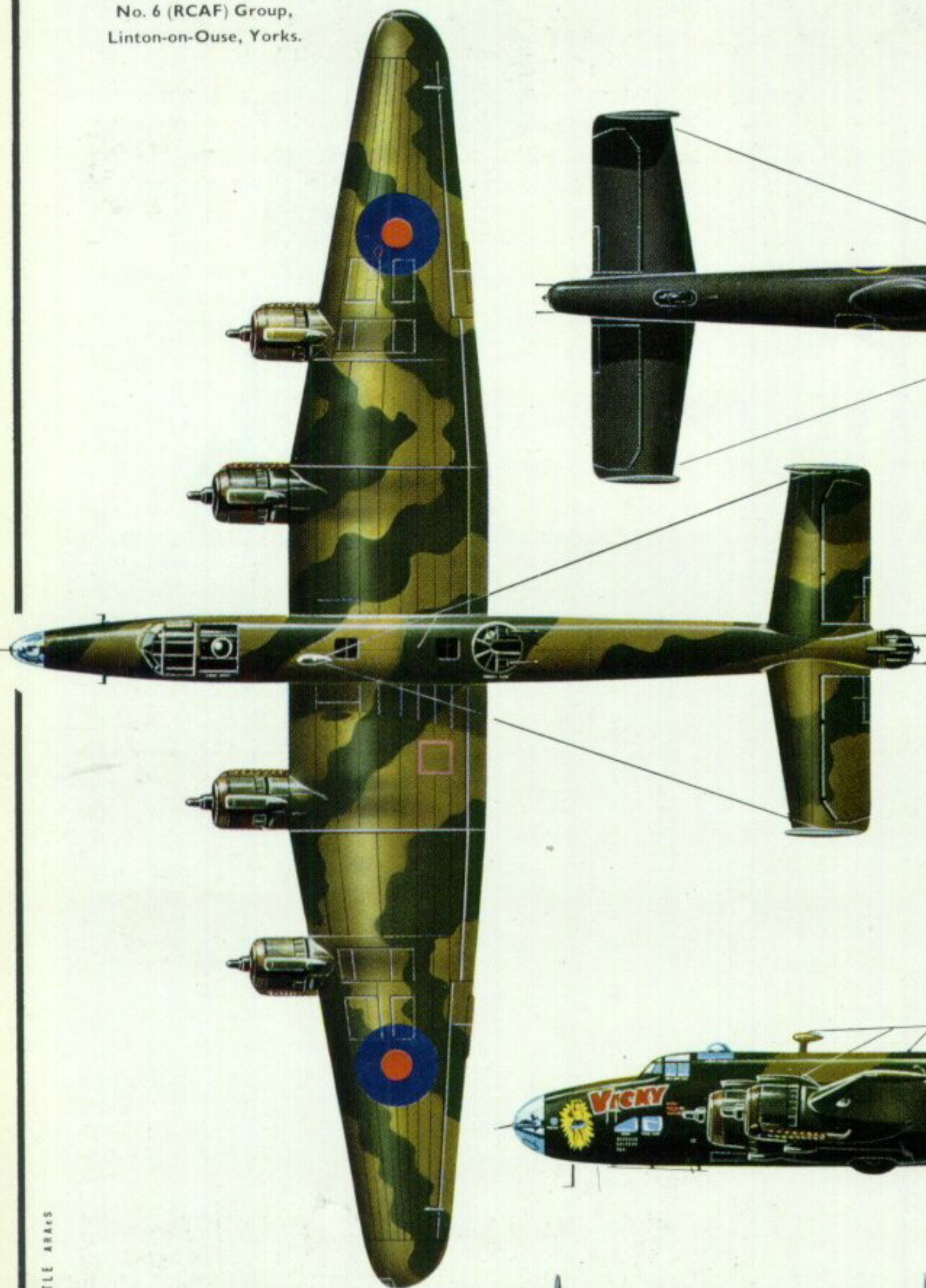
NUMBER

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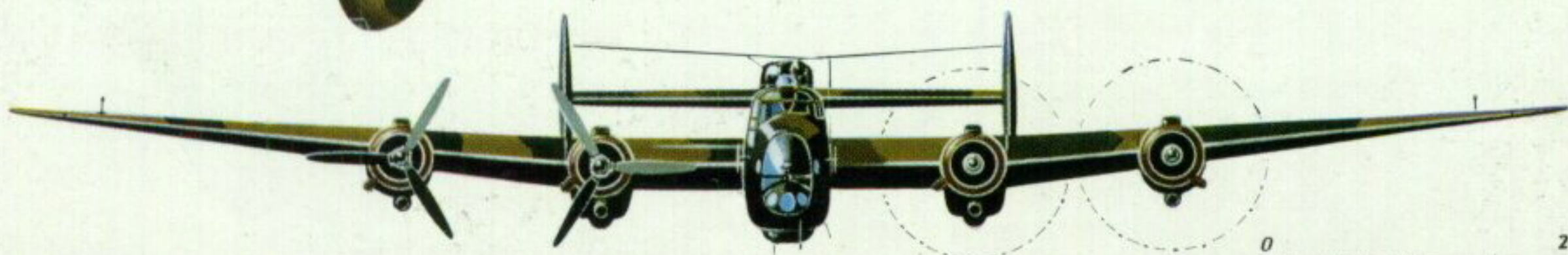
HALIFAX B.VII, PN230,
'Vicky' The Vicious Virgin,
of No. 408 'Goose' Squadron,
No. 6 (RCAF) Group,
Linton-on-Ouse, Yorks.



Crew names

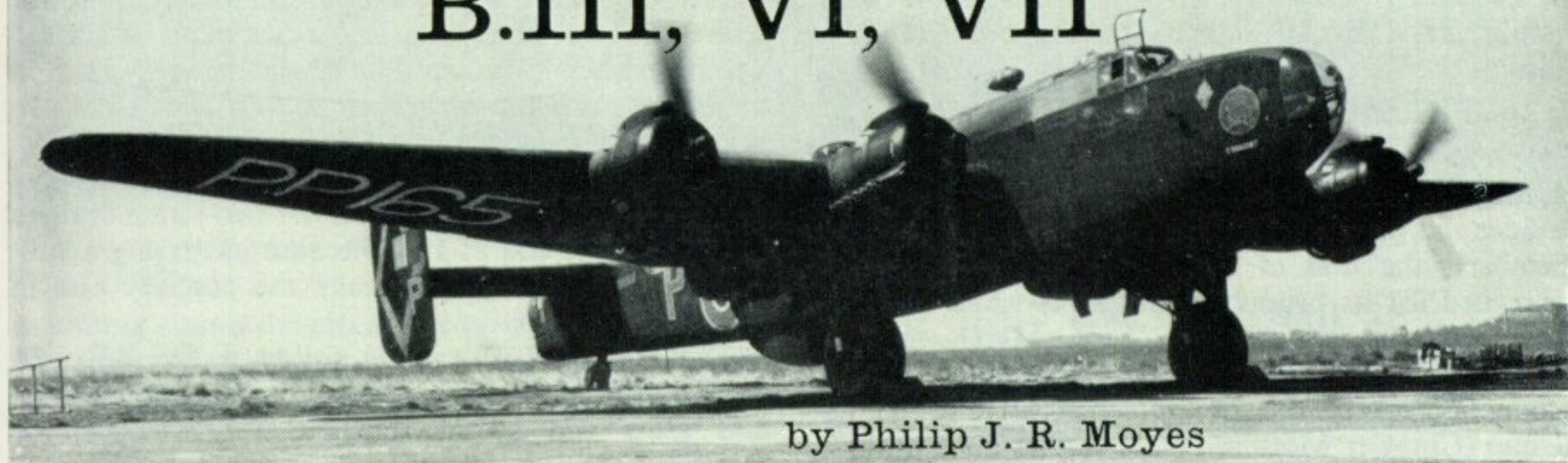
Bomb Aimer: 'Scratch'
W/Op: 'Gee Sam'
Navigator: 'Blood and Guts'
Pilot: 'The Dirty Old Man'
F/Eng: 'Gassless'
MU/Ag: 'Hairless Joe'
R. Gunner: 'Rabbit'

(painted beneath respective stations
on port side of fuselage).



0 20'

The Handley Page Halifax B.III, VI, VII



by Philip J. R. Moyes

B.VI PP 165 L8-P of No. 347 (F.A.F.) Sqn. (Groupe 1/25 'Tunisie') seen after V.E. Day. Groupe 1/25's 'moonlit bison' badge appears on nose, also name 'C. Brachet'. (Photo: French Air Force)

One of the truly famous aircraft of World War II, the Handley Page Halifax had its real beginning in Air Ministry Specification P.13/36 which called for an all-metal, mid-wing cantilever monoplane "heavy-medium" bomber powered by two Rolls-Royce-Vulture liquid-cooled engines, then still under development. Two prototypes of the H.P.56, as the Vulture-powered aircraft was called, were ordered in April 1937, but the following August, when the doubtful prospects of the Vulture had become apparent, the Air Ministry induced Handley Page to re-design the bomber (apparently "much against the company's wishes"*) to take four Rolls-Royce Merlins instead. The prototype of the new aircraft, which was designated the H.P. 57, first flew on 25th October 1939, piloted by Major J. L. Cordes. It had now grown considerably in size and weight compared with the original design. Its wing span was nearly 100 ft. and its all-up weight was around 55,000 lb. by the time it was ready for service.

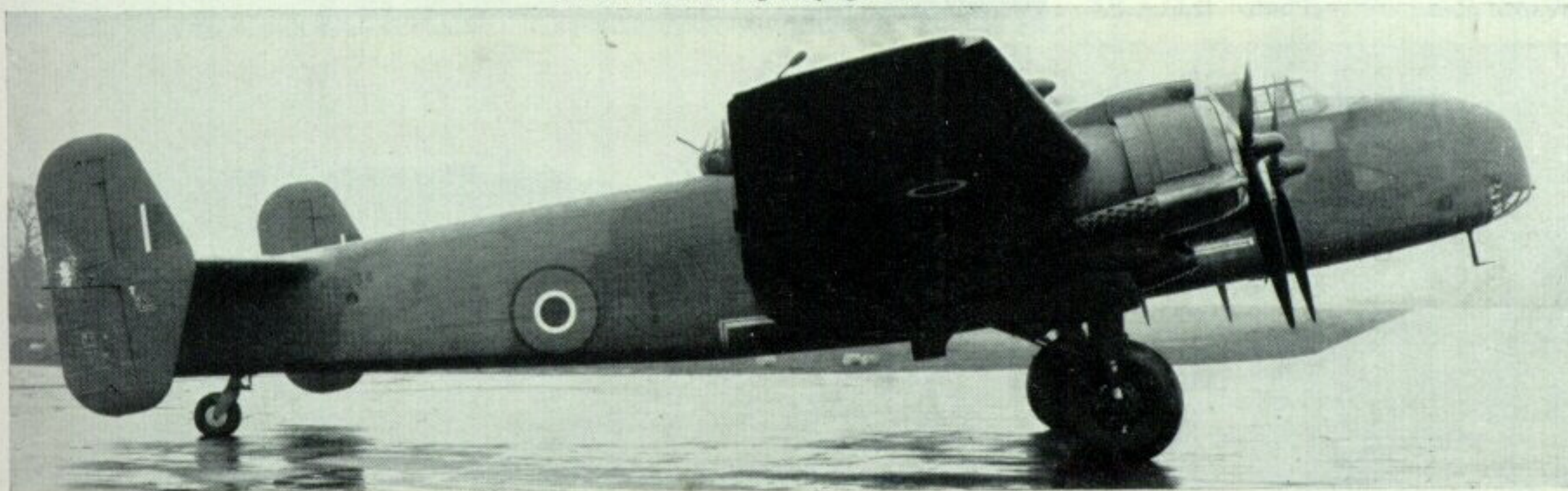
The H.P.57 was ordered into production before the first prototype flew, the first "pilot" order—for 100—being placed in January 1939. A second prototype, which first flew in August 1940, was quickly followed by the "first-off" less than two months later.

Lord Halifax foreshadowed his namesake's lethal powers at the official christening ceremony (featuring a late production Mk.I and with Lady Halifax officiating) at Radlett in September 1941. Quoting an old Yorkshire prayer, "from Hull, Hell and Halifax, good Lord deliver us", he said that the Germans might well use the same plea during the months and years to come.

There was nothing very unorthodox about the design of the Halifax. Briefly it was a mid-wing monoplane of moderate aspect ratio with four engines and twin fins and rudders. It was of all-metal construction with smooth, stressed-skin covering except for the control surfaces which were fabric-covered. The fuselage was "slab-sided" and contained a 22 ft.-long bomb bay, further cells being provided in the wing centre-section. The cockpit was flush with the top of the fuselage. Fat nacelles of Handley Page design and not the slim, Rolls-Royce designed standard "power-eggs" were used. These had a higher drag, but they later proved valuable since they were readily adaptable to the larger Bristol Hercules radial engines.

Four 1,145 h.p. Merlin X engines driving Rotol constant-speed compressed-wood airscrews gave the

First prototype B.III (Hercules VI engines), formerly Handley Page's 'hack' B.II. Serialled R9534, this aircraft is the subject of a side-view drawing on page 11.



Halifax B.I a maximum speed of 265 m.p.h. at 17,500 ft. Normal range with 2,242 Imp. gal. of fuel and a 5,800 lb. bomb load was 1,860 miles. Maximum bomb load was 13,000 lb. Wing span was 98 ft. 10 in., length 70 ft. 1 in., and wing area 1,250 sq. ft. Defensive armament consisted of nose and tail Boulton Paul power-operated turrets, mounting two and four .303 in. Browning guns respectively. At first these were supplemented by beam guns poking out from the sides of the fuselage.

PRODUCTION PROGRAMME

To undertake the large production programme, an organisation known as the Halifax Group was formed. Besides the parent company, it comprised four main members, the first of which was English Electric, renowned for its production methods while building Hampdens. Its first Halifax—a B. Mk.II—flew in August 1941. Other companies brought into Halifax production were: the London Aircraft Production Group (Chrysler Motors, Duple Bodies and Motors, Express Motor and Body Works, Park Royal Coachworks and the London Passenger Transport Board), Rootes Securities and Fairey Aviation.

During its period of peak production, the Halifax Group comprised 41 factories and dispersed units (7½ million square feet), 600 sub-contractors and 51,000 employees. One complete Halifax was produced by it each working hour.

Two techniques which Handley Page helped to pioneer, photo-lofting and split construction and assembly, were the main factors behind the high rate of production. Out of 10,018 British heavy bombers built between 1940 and mid-1944, 4,046 were Halifaxes—more than 40 per cent. In all, 6,176 Halifaxes were produced, the last one, an A (for Airborne Forces) Mark IX, being delivered to the R.A.F. at the end of 1946.

OPERATIONAL DEBUT

The Halifax made its operational debut on the night

Right: Thirteenth production B.III, HX-238, bearing 'prototype' marking and allotted to Boulton Paul, R.A.F. Llandwrog (for air-firing trials), H.P., A and A.E.E., 48 M.U., and H.P. Rawcliffe in turn.

Below: B.III MZ620 KW-T of No. 425 ('Alouette') Sqdn., R.C.A.F., Tholthorpe. Note 'square' wing-tips and ventral gun. (Photo: R.C.A.F.)

of 11/12th March 1941, when No. 35 Squadron of No. 4 Group, R.A.F. Bomber Command, attacked the docks and shipping at Le Havre. Not until the following July, however, was the existence of the Halifax disclosed officially to the British public. The announcement followed a daring daylight attack made by Halifaxes on the notorious *Scharnhorst* at La Pallice. The German battle-cruiser had slipped out of Brest but five direct hits and a hot time in general compelled her to return. She remained in Brest until an escape with the *Gniesenau* enabled them both to regain their home ports in a very battered condition.

The Halifax was withdrawn from daylight bombing operations after a final raid on the two-battle cruisers at Brest at the end of 1941 because increasing fighter opposition threatened to make the casualty rate in such raids prohibitive.

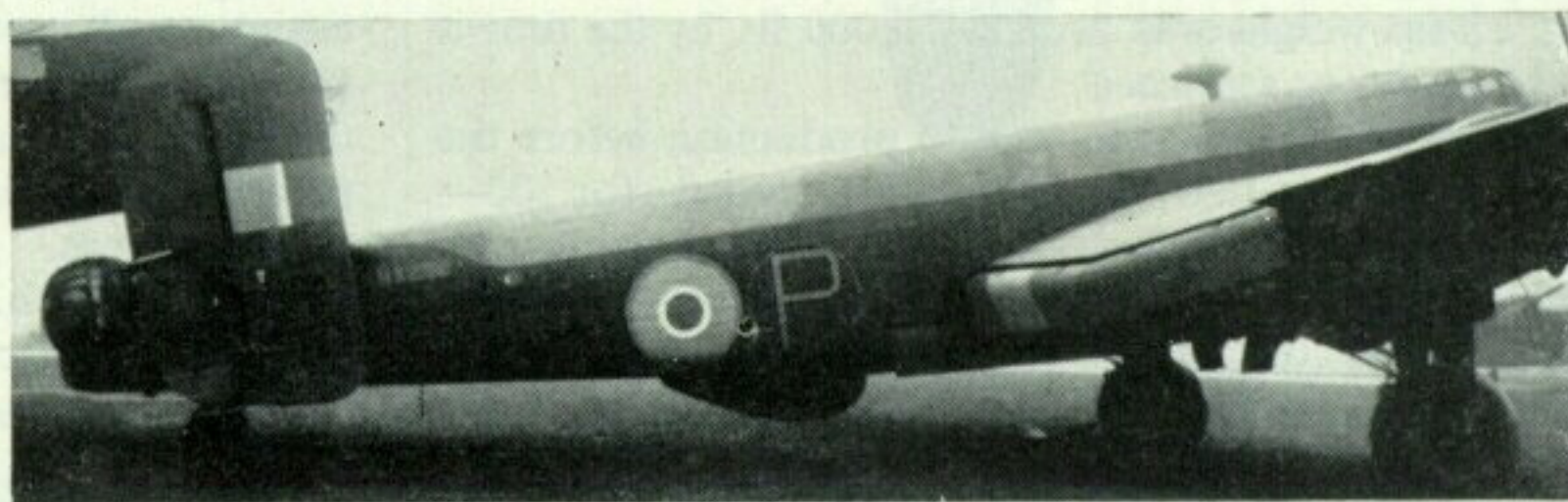
The Halifax B.II rapidly followed the B.I. into service. It had various combinations of turrets and guns and sacrificed speed for fire-power or vice-versa.

By the end of 1943 a complete bomber Group (No. 4) based in Yorkshire was equipped entirely with Halifaxes. It operated with them throughout the remainder of the European war. The R.C.A.F. Bomber Group (No. 6) which formed in Yorkshire in late 1942 also adopted the Halifax. Although this was not its only aircraft, each of its ultimate total of 14 squadrons was for a time solely equipped with them.

Bomber Command reportedly had no less than 76 Halifax squadrons and other units at the time of its peak strength.

In the autumn of 1942, the original Halifax squadron. No. 35, was one of the five units chosen to form the nucleus of the famous Pathfinder Force, later given Group status (No. 8 Group). In 1943 the first Canadian Halifax squadron, No. 405, joined it.

When the Pathfinder Force began to operate, a vast improvement was effected in the technique of night bombing. The Halifaxes lent their weight to the





B.III LL599 Z5-E of No. 462 (R.A.A.F.) Sqn. Note 'square' wing-tips. Ventral gun position was removed from photograph by wartime censor. (Photo: R.A.A.F.)

mounting round-the-clock offensive which Air Chief Marshal Arthur Harris (later M.R.A.F. Sir Arthur) had promised would "scourge the Third Reich from end to end".

By now the Halifax B.II Srs. IA was entering service. It retained the standard 4-gun Boulton Paul rear turret but in the mid-upper position was a compact Boulton Paul "Defiant"-type turret, mounting four guns instead of the earlier "Hudson"-type turret's two. It also had a neat moulded Perspex nose mounting a single hand-operated .303 in. Vickers "K" gun. Powered by Merlin XXs or XXIIIs, this cleaned-up model had an edge of about 20 m.p.h. in cruising speed over the earlier versions. (An interim version of the Halifax Mk.II known as the Mk.II Srs. I (Special) was produced and eventually this also had a "Defiant"-type dorsal turret. To overcome a shortage of Messier undercarriages, the Halifax Mk.V which used a Dowty undercarriage was introduced and the two main versions of this—the Mk. V Srs. I (Special) and Srs. IA—corresponded to the above-mentioned Mk.II variants. It is hoped to describe in detail the development of these and also the earlier Merlin-powered Halifaxes in a later publication in this series.

HALIFAX B.III

Although the Merlin-engined Halifax did valuable work with Bomber Command, its all-round performance was always unsatisfactory because it was underpowered. Labouring along at only moderate heights it was easy prey for enemy fighters and by 1943 losses had become serious. The type continued to be unsatisfactory throughout 1943 and, to quote the Official History, "it was not until about February 1944, when the Mark III (Bristol Hercules air-cooled radial engines) became available in quantity, that the Halifax began to hold its own against the formidable fighter defences of the Third Reich".

The decision to produce the Halifax III (company designation H.P.61) was taken after tests, begun in 1942, with Handley Page's "hack" Mk.II R9534 re-engined with 1,615 h.p. Bristol Hercules VIs. The first production aircraft, HX226, made its first flight in July 1943.

The extra power afforded by the Hercules power plants boosted the Halifax's performance, and permitted a maximum all-up weight of 65,000 lb. Hercules XVI's driving de Havilland hydromatic air-screws were fitted and during production the wing



Left: B.III LL573 'L8-B' of No. 347 (F.A.F.) Sqn. seen at Rawcliffe, York, Xmas, 1945. Note ventral gun position.

Below: B.IIIs LL596 'KW-U' and MZ454 'KW-S' of No. 425 ('Alouette') Sqn., R.C.A.F., Tholthorpe. Note wing-tips and 'mid-under' installations. (Photo: R.C.A.F.)



span was increased from 98 ft. 10 in. to 104 ft. 2 in. The increase in wing area improved the operational ceiling and extended, curved wing-tips became standard on all subsequent marks. No. 2 fuel tank was transferred from the intermediate-section to the centre-section of the wings and provision made for additional (optional) fuel tanks in the outboard bomb cells in the centre-section. Other features of the Mk.III included a retractable tailwheel and an H2S scanner or a ventral gun position (one .50 in. Browning) as standard.

The Halifax III began to enter service with Bomber Command in November 1943 (the first squadrons to receive the type being Nos. 433 and 466 which received their first aircraft on 3rd November) and by the end of the year several squadrons of Nos. 4 (R.A.F.) and 6 (R.C.A.F.) Bomber Groups were so equipped.

Transformation of the war situation came in 1944 with the invasion of Europe. Attacks were made on French marshalling yards. Halifaxes returned to their early rôle of daylight bombers as a semi-tactical force. Gun emplacements on the French coast, strong points and troop concentrations were attacked with uncanny accuracy.

During an attack on Vaires marshalling yards at Paris on the evening of 18th July 1944, crews were given a convincing demonstration of the sound construction and airworthiness of the Halifax when B. Mk.III MZ313, captained by F./Lt. P. H. Finley of No. 466 (R.A.A.F.) Squadron, was severely damaged by a shell exploding in the fuselage. The rudders were u/s, the elevators would not respond and it seemed highly probable that the Halifax would break in two. Finley ordered his crew to bale out and his mid-upper gunner, while floating earthwards, considered that the aircraft's back was broken as the tail unit was swinging from side to side. Nevertheless, Finley and his bomb-aimer attempted to fly the aircraft back to base, and by great physical exertion managed to coax it back across the sea to the Dunge-

ness area, where it became unmanageable; they baled out shortly before it disintegrated in the air. It appeared incredible but very praiseworthy that such a large part of the return flight had been made in such a condition, and general confidence in the rugged qualities of the Halifax was increased.

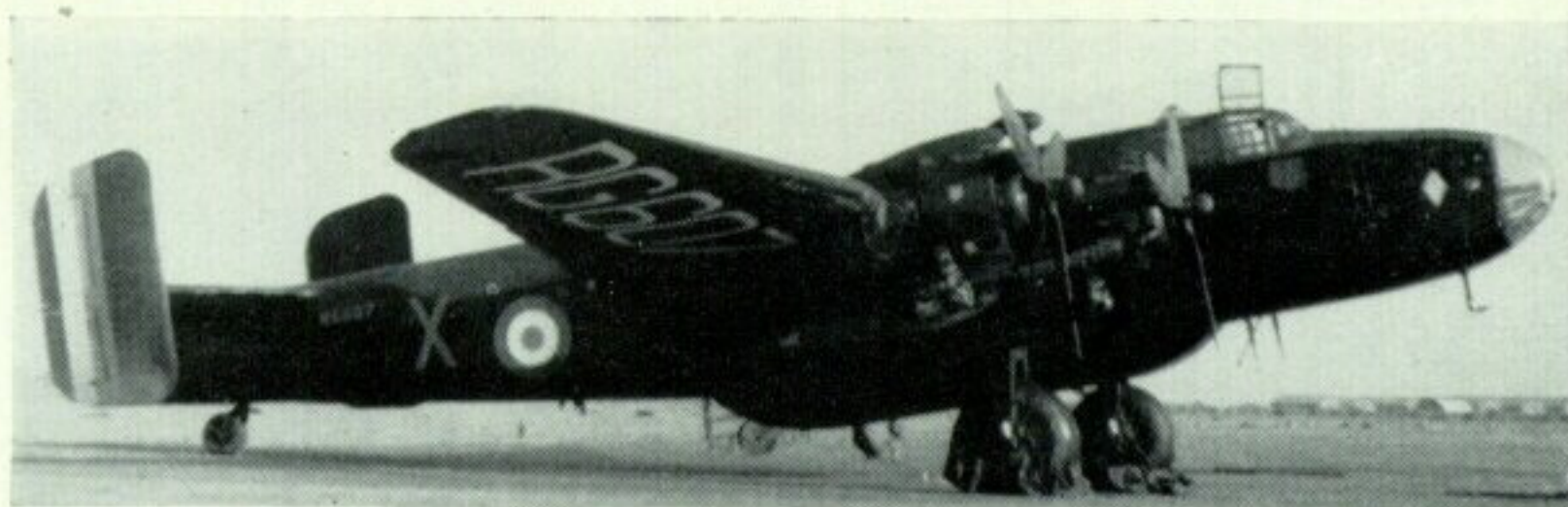
The only V.C. awarded to a Halifax pilot (or to any Halifax crew-member) went to P./O. Cyril J. Barton who displayed great gallantry in bringing his crippled Halifax of No. 478 Squadron back from a raid on Nuremburg on 30th/31st March 1944. Barton crash-landed in England and lost his life but his remaining crew (some had baled out earlier) survived. His aircraft was Halifax III LK797 LK-E named *Excalibur* and bearing on its nose an emblem depicting a hand emerging from the base of a cloud and grasping the legendary sword of King Arthur.

In addition to disorganising enemy communications, Halifaxes waged a vigorous offensive against flying-bomb sites. The high water mark was reached in August 1944 when No. 4 Group alone flew 3,629 sorties. By this time the *Luftwaffe* was too enfeebled to offer very serious resistance although as recently as June this Halifax Group created a Bomber Command record by destroying 33 fighters.

This group also undertook emergency transport work and in little more than one week ferried nearly half a million gallons of petrol to an airfield near Brussels to meet the urgent needs of the British Second Army during the heroic struggle at Arnhem.

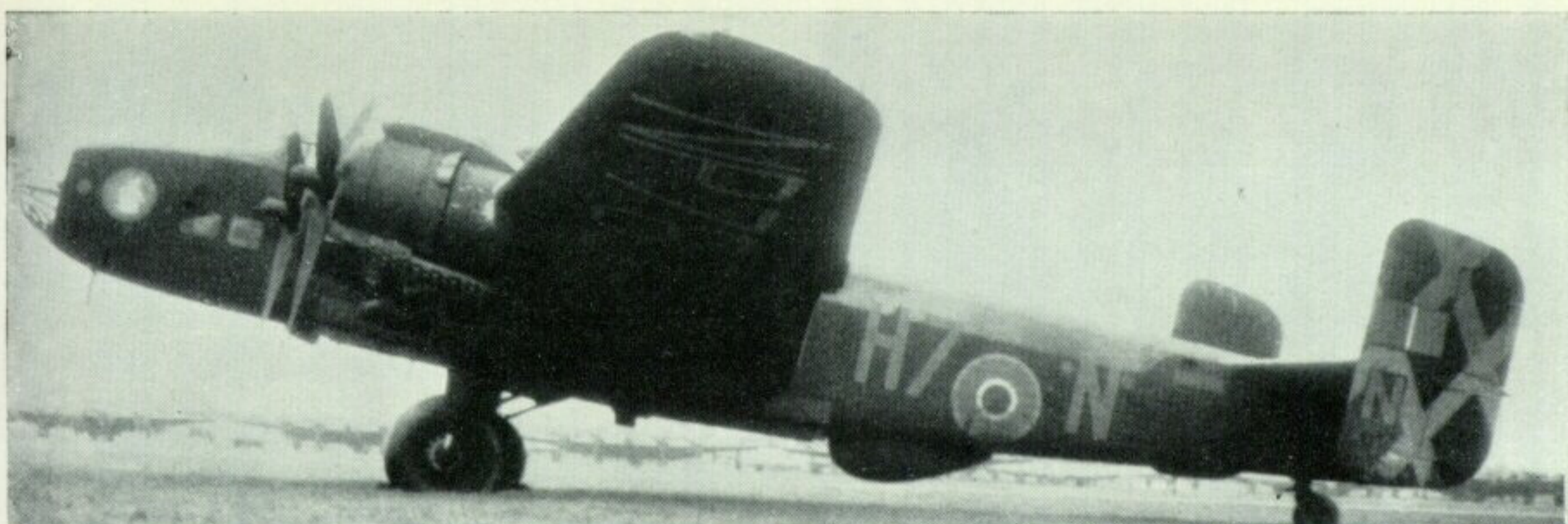
The massive weight of Bomber Command was next hurled into the renewed offensive against oil targets. Of special significance was an attack on the oil plant at Homberg in the Ruhr on 27th August. A force of 216 Halifax IIIs from No. 4 Group and 27 Mosquitoes and Lancasters from No. 8 (Pathfinder) Group were despatched and were accompanied by an almost equal number of Spitfires of Fighter Command. Only one German fighter—a Bf.110—was sighted by the Bomber Command crews and it was driven off by the

Right: B.VI RG607—one of several presented to France after the war—of Groupe 'Tunisie', F.A.F. seen at Mauripur, India, 12th Oct. 1947. Note freight pannier. (Photo: G. A. Cull)

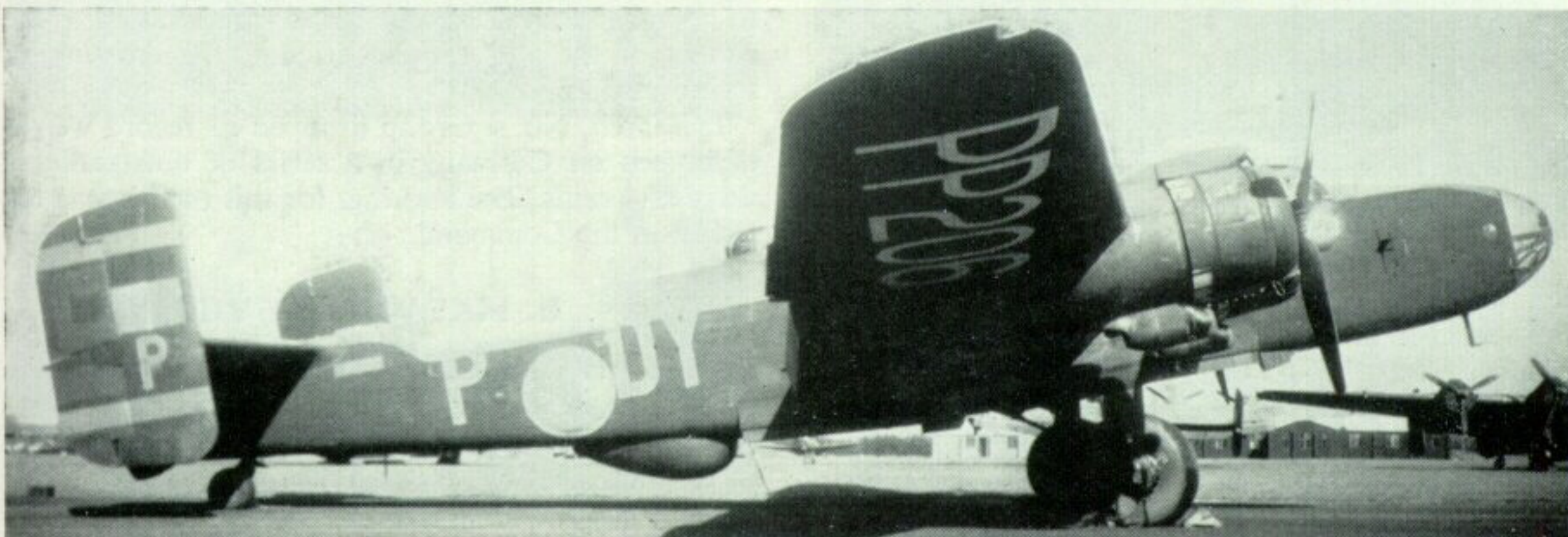


Below: B.III NR169 'G-AGXA'—formerly 'HD-T' of No. 466 (R.A.A.F.) Sqdn.—which Mr. G. N. Wickner purchased and flew to Australia in 1946.





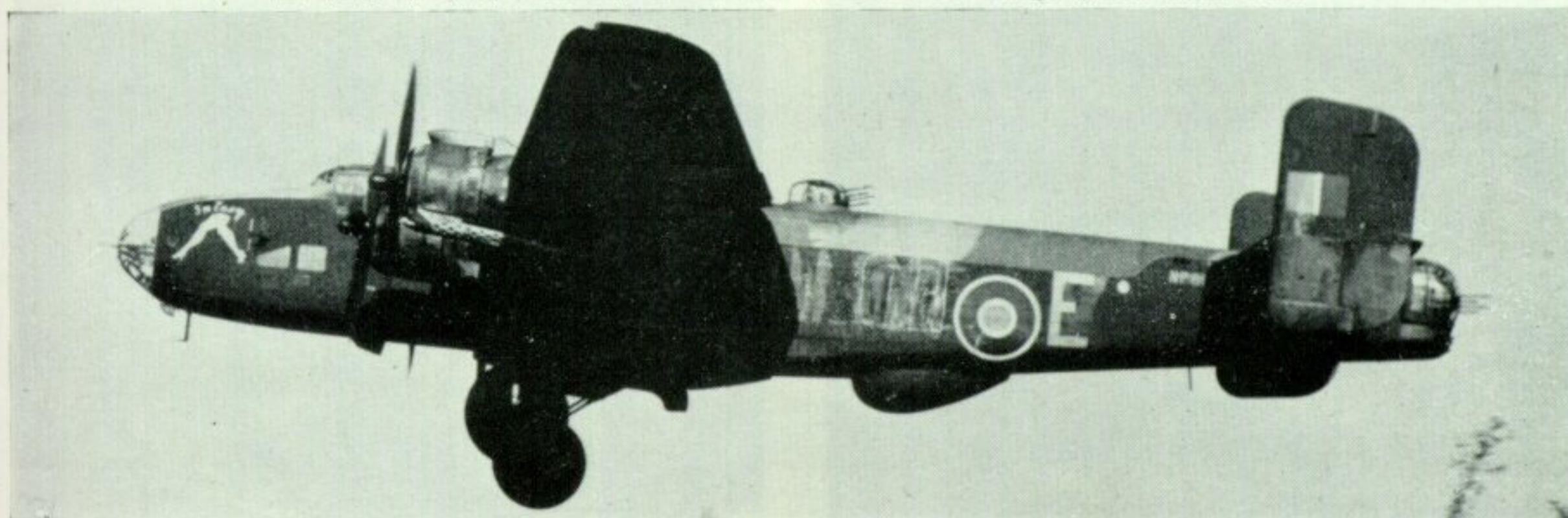
B.VI NP763 H7-N of No. 346 (F.A.F.) Sqdn. (Groupe 2/23 'Guyenne') in storage at No. 29 M.U. High Ercall, Feb. 1946. Close-up of Brer Rabbit insignia (white and blue on orange disc with red outer circle) appears on page 10.



B.VI PP206 DY-P of No. 102 (Ceylon) Sqdn. photographed at No. 29 M.U. High Ercall, Feb. 1946.



Above: B.VI RG867 L8-H of Groupe 1/25 'Tunisie' F.A.F. after the war. Note Boulton Paul 'D'-type rear turret.
Below: B.VII NP808 of No. 426 ('Thunderbird') Sqdn. R.C.A.F. Named 'I'm Easy' it is seen here shortly after transfer from No. 424 ('Tiger') Sqdn., R.C.A.F., and when its new codes 'OW' had only been chalked on.





Modified B.VI RG815 'Mercury' of the Empire Radio School, Debden. In 1946-47 this aircraft made a 25,000-mile radio and radar demonstration flight.



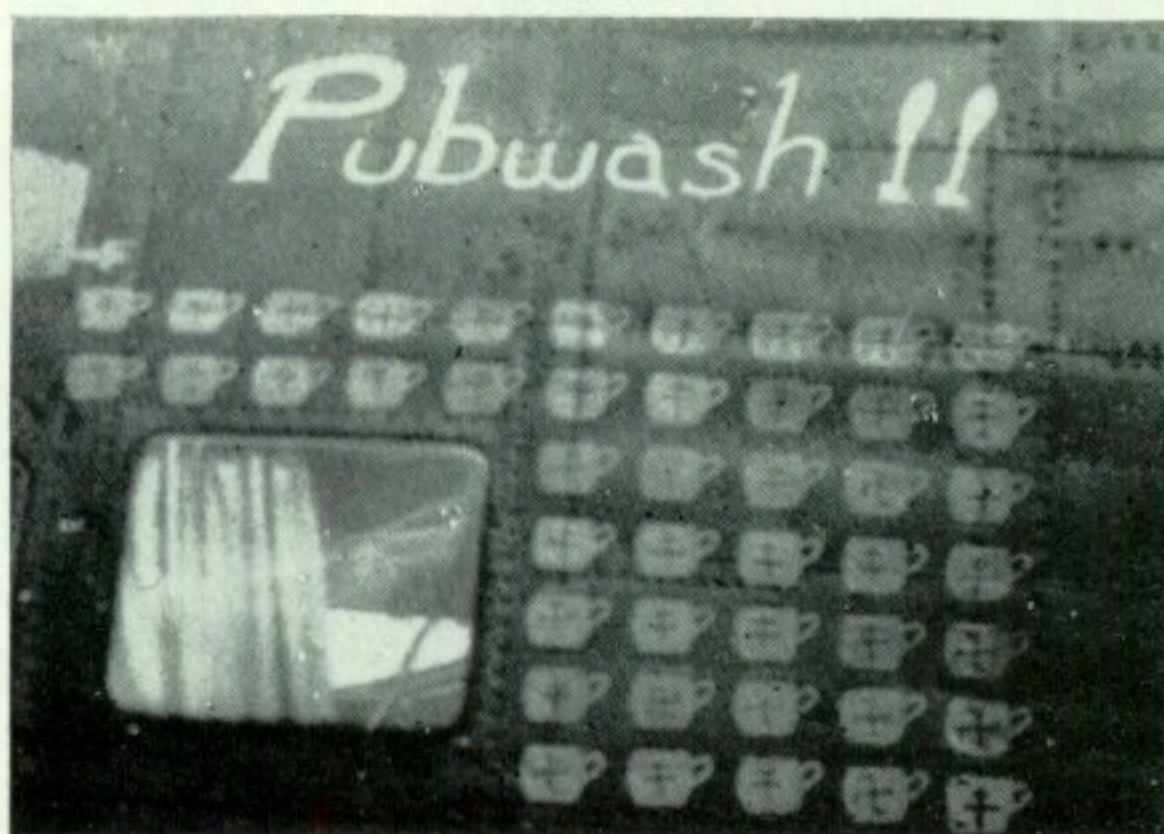
B.VI PN369, operating in S.E.A.C., seen on a mission against the Japanese. Note streamlined fairing beneath rear fuselage.
(Photo: Imp. War. Mus.)

Spitfires before it could do any damage. Heavy A.A. fire was encountered in the target area but none of the bombers was brought down and all the aircraft subsequently returned safely home. This was the first major daylight operation by Bomber Command against a German target in 1944 and the first also in which Bomber Command had ever penetrated beyond the Rhine with fighter cover. The target was partly obscured by cloud and although the damage done to it was somewhat scattered it was, in places, quite severe.

Some indication of the size of the Halifax's contribution to the war effort during 1944 can be gained from the activities of No. 4 Group alone. It flew 25,464 sorties (on all types of operation including bombing, sea-mining and emergency transport) at a cost of 402 aircraft.

Smashing attacks on Hanover, Magdeburg and Stuttgart came at the beginning of 1945. Cologne, Münster, Osnabruck and many other "old favourites" of Bomber Command—mostly homes of synthetic oil plants—also returned to the target list. Halifaxes

B.III NA497 'IP(?)—C' 'Pubwash', No. 434 ('Bluenose') Sqdn., R.C.A.F.



bombed them by day and by night until the time came to pound the great railway centres preparatory to the climax of the war on the ground, the crossing of the Rhine.

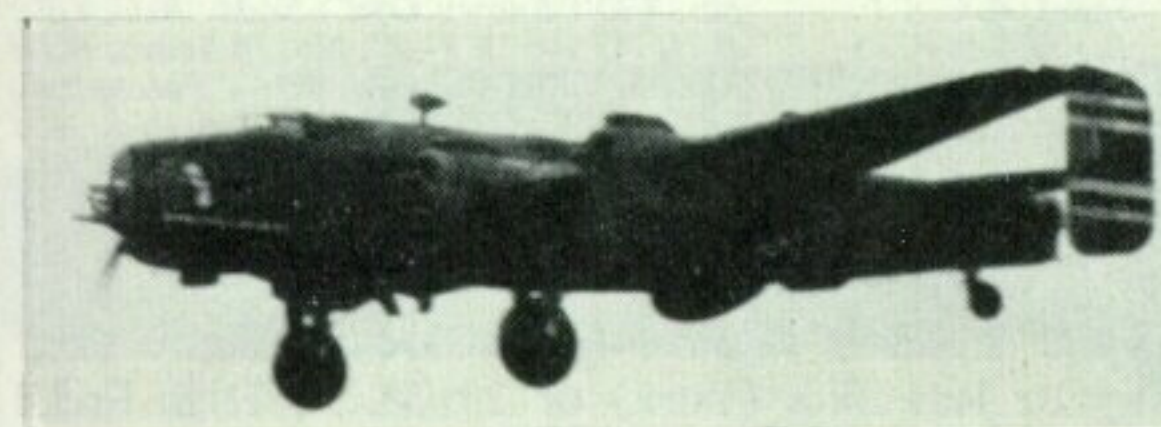
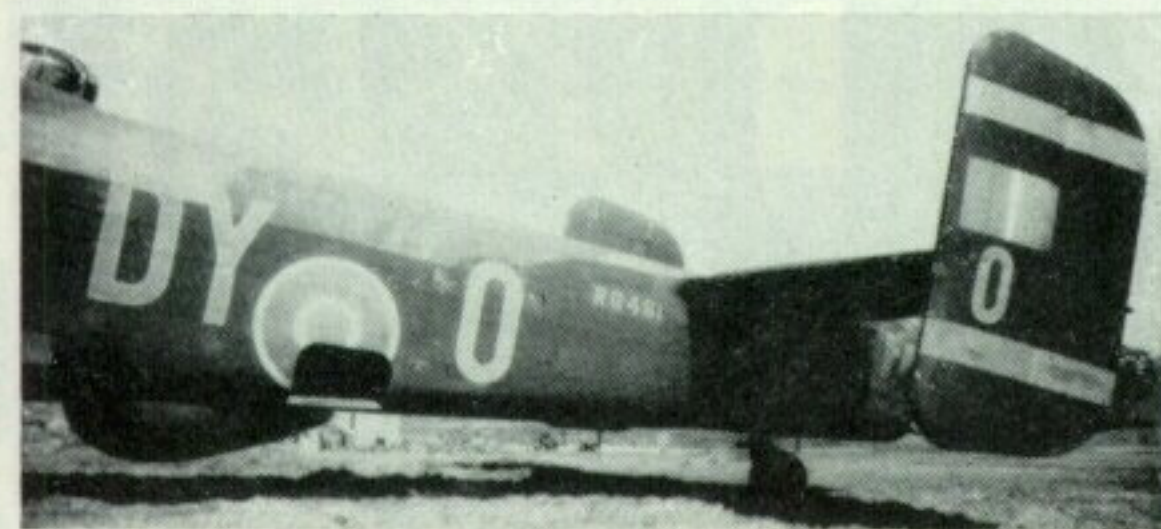
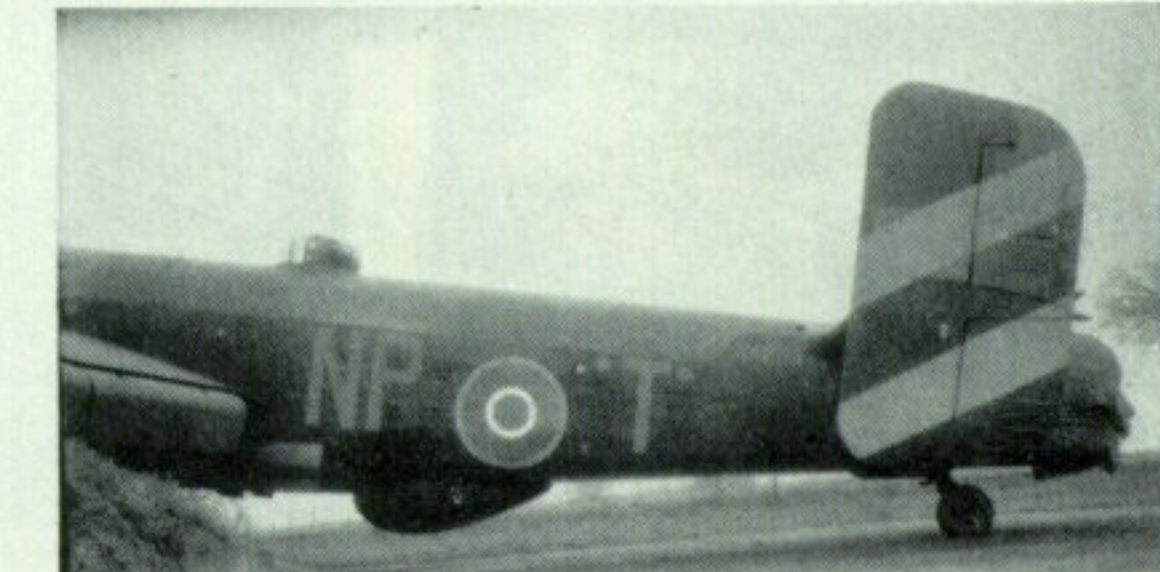
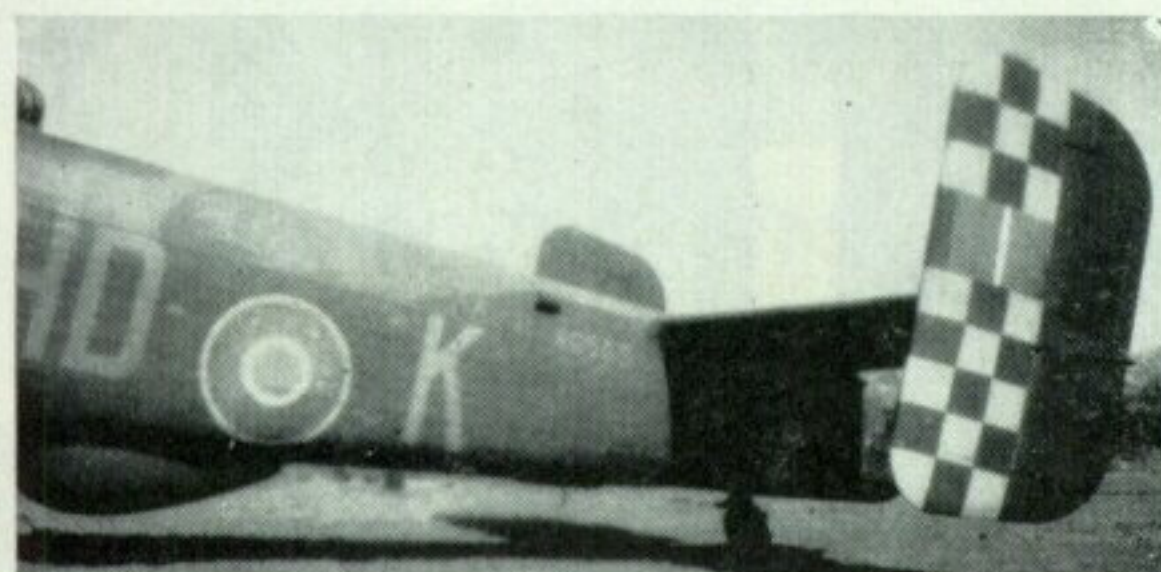
In March, No. 4 Group dropped its record weight of bombs on Germany in a series of outstandingly successful raids. The loss rate for this month was the lowest in the Command.

B. MKS.VI AND VII

Two new marks of Halifax were in service alongside the B.III in the closing months of the European war—the Mk.VI and VII. Both had a pressure-transfer fuel system, with "grouped tanks" (one group per engine), additional tankage, special carburettor filters over the carburettor intakes and an H₂S scanner permanently fitted. More and more attention was being paid to preparations for a final campaign in the Far East, and "tropicalisation" was the order of the day for new types. The B.VI had four 1,675 h.p. Hercules 100 engines which gave it a maximum speed of 312 m.p.h. at 22,000 ft. and improved its all-round performance. It had an all-up weight of 68,000 lb. and the first B.VI, NP715, first flew on 10th October 1944. The B.VII had Hercules XVI engines—the power-plant of the B.III. This mark came into being because airframe production exceeded supply of Hercules 100 engines. It was used primarily by the squadrons of No. 62 (Beaver) Base and its sub-stations in No. 6 (R.C.A.F.) Group, i.e. Nos. 408, 426, 432 and (to a

Unidentified Halifax of No. 6 (R.C.A.F.) Group





No. 4 GROUP TAIL MARKINGS, 1944-45. Left-hand col: top to bottom. B.III NA222 'C8-O' No. 640 Sqn. Yellow-on-black chequerboard. Codes outlined yellow; B.III RG346 'HD-W', No. 466 (R.A.A.F.) Sqn., yellow horizontal stripes B.VII RG565 'HD-K', No. 466 (R.A.A.F.) Sqn. A hybrid! Not used on war ops. and probably a dual control trainer used when 4 Group joined Transport Command; B.VI RG481 'DY-O', No. 102 Sqn. Red horizontal stripes, yellow-outlined code letters; A B.III of No. 78 Sqn. White horizontal stripes. Believed on flight leaders' aircraft only.

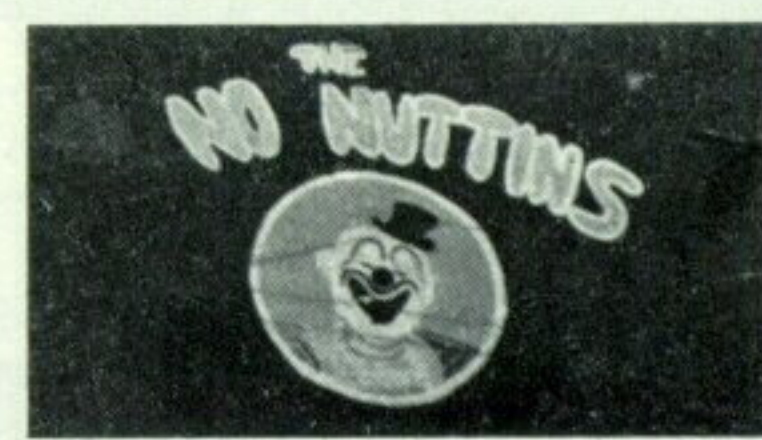
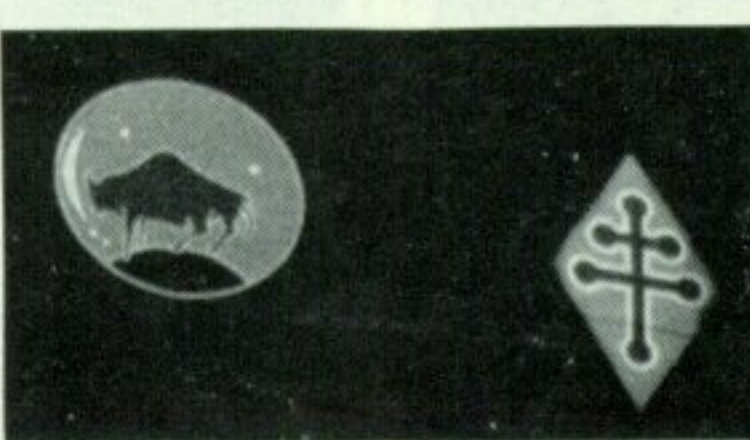
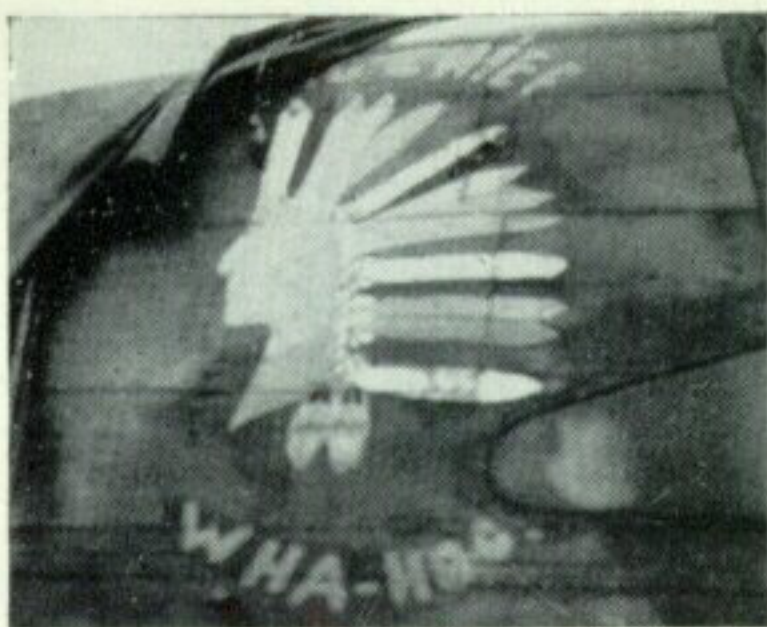
Right-hand col: top to bottom. B.III MZ431 'Z5-J' No. 462 (R.A.A.F.) Sqn. Yellow vertical stripes; B.VI NP763 'H7-N', No. 346 (F.A.F.) Sqn. Red 'trellis-work', yellow-outlined codes, French fuselage roundels; B.III NA233 'NP-T', No. 158 Sqn. Yellow diagonal stripes; B.VI RG669 'L8-G', No. 347 (F.A.F.) Sqn. Red 'hollow-diamond' yellow-outlined codes, French fuselage roundels.

small extent) 415 Squadrons. The B.VI served in Nos. 76, 77, 78, 102, 158, 346, 347 and 640 Squadrons of No. 4 Group but was only just becoming established when hostilities in Europe ended.

FINAL OPERATIONS AND WAR RECORD

The last time that Halifaxes of Bomber Command operated in force against the enemy was on 25th April 1945, when a heavy daylight attack was made on coastal gun batteries on Wangerooge Island in the East Frisians. On 2nd/3rd May 1945, Halifaxes of No. 100 (Bomber Support) Group flew diversionary R.C.M. (sometimes with bomb-dropping) sorties against Flensburg, Schleswig-Holstein and elsewhere, in support of a Main Force attack on Kiel—Bomber Command's last raid of the war.

Halifaxes of Bomber Command flew more than 82,000 operational sorties during the war, and dropped nearly a quarter of a million tons of bombs. One



NOSE INSIGNIA. Top to bottom: B.III NA499 'SE-W', No. 431 ('Iroquois') Sqn. R.C.A.F.; B.III 'IP(?) - Q', No. 434 ('Bluenose') Sqn. R.C.A.F.; B.III MZ913, No. 462 Sqn. R.A.A.F.; B.III 'DT-B' 'Babe' No. 192 Sqn.

Top to bottom: B.III NP957 'KW-Q', No. 425 ('Alouette') Sqn. R.C.A.F. (Photo: R.C.A.F.); B.VII NP756 'EQ-P', No. 408 ('Goose') Sqn. R.C.A.F.; B.VI RG607 'X' (ex 'H7-X') of Groupe 'Guyenne', F.A.F. carrying insignia of Groupe 'Tunis' (Photo: G. A. Cull); B.VI NP763 'H7-N', No. 346 (F.A.F.) Sqn.

Top to bottom: B.III MZ587 'PT-C', No. 420 ('Snowy Owl') Sqn. R.C.A.F.; B.III NP995 'EY-Z', No. 78 Sqn.; B.III MZ857 'BM-N', No. 433 ('Porcupine') Sqn. R.C.A.F.; A B.III of No. 434 ('Bluenose') Sqn. R.C.A.F. (Photo: R.C.A.F.)

thousand eight hundred and thirty-three Halifaxes were reported missing.

With No. 100 Group of Bomber Command Halifaxes waged a fantastic war of their own—a war of the ether, jamming and confusing the enemy's radio and utterly confounding his fighter controllers. Other Halifaxes, operating with "Special Duties" squadrons of Bomber Command, dropped secret agents in enemy-held territory and countless loads of arms and supplies to resistance movements.

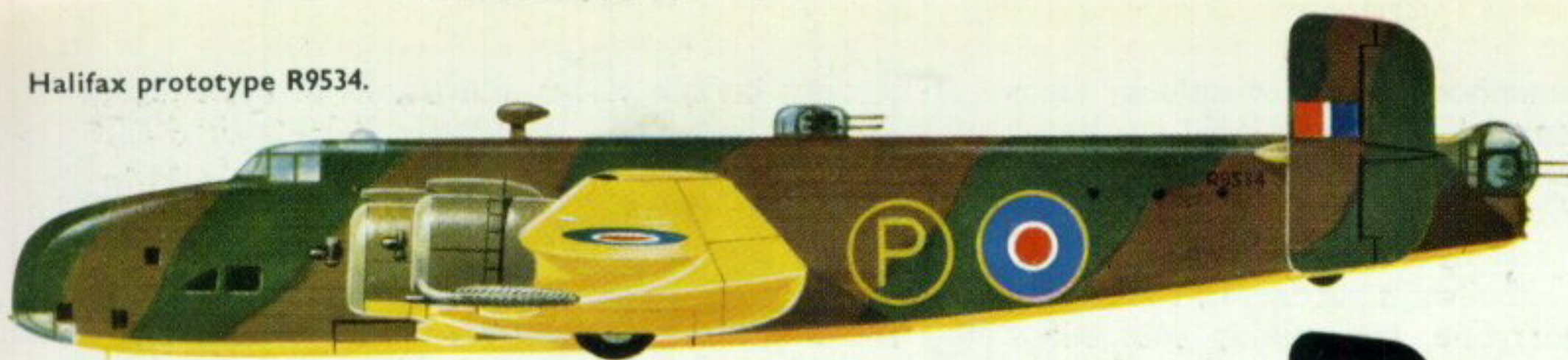
At the end of the European war, Bomber Command's Halifax squadrons were either disbanded, transferred to Transport Command and soon re-equipped with Dakotas, Yorks or Liberators, or else—in the case of some units of No. 6 Group—re-armed with Lancasters before returning to Canada. Nearly

all the Halifaxes of Nos. 4 and 6 Groups found their way to Rawcliffe (York) or 29 M.U., High Ercall (Salop) and by 1947 most of them had been scrapped.

After VE Day, Halifaxes were sent to the Far East to harass the Japanese but the advent of the atom bomb almost made their journey unnecessary. Some of these bombers, fitted with extra fuel tanks in their bomb bays and carrying radar-detection equipment, did get an opportunity to pin-point enemy radar stations which were afterwards bombed.

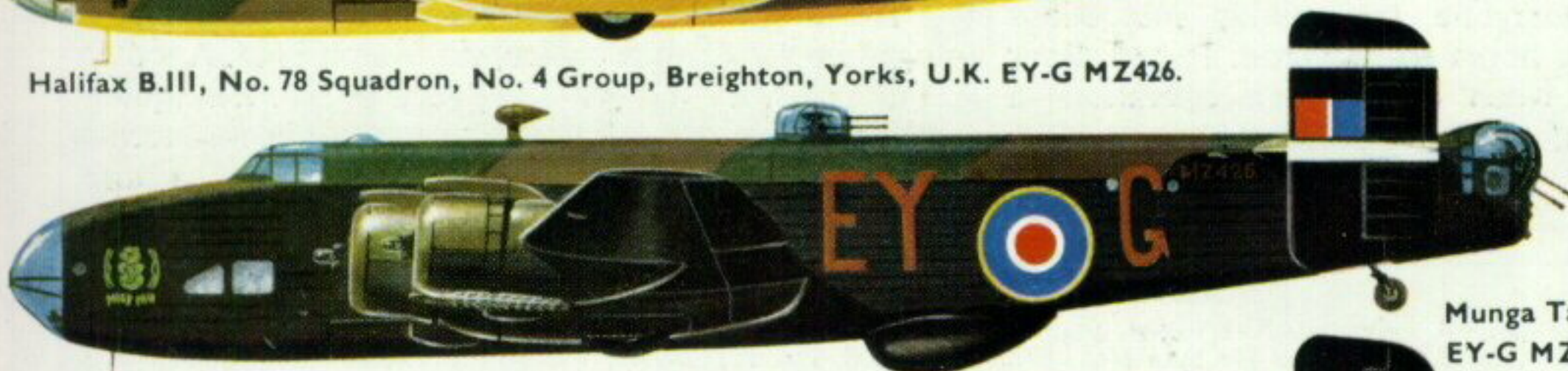
One of the finest tributes to the Halifax was paid by F./Lt. N. G. Gordon (R.C.A.F.) of No. 158 Squadron, R.A.F., based at Lissett, near Bridlington. He was captain of the fourth crew to complete a tour of operations on *Friday the Thirteenth*. This renowned Halifax, despite its name and the skull and crossbones,

Halifax prototype R9534.



Prototype identification marking.

Halifax B.III, No. 78 Squadron, No. 4 Group, Brighton, Yorks, U.K. EY-G MZ426.



Munga Taipo
EY-G MZ426.



Halifax B.III, No. 171 Squadron, No. 100 Special Duties Group (RCM), Foulsham, Norfolk, U.K. 6Y-E MZ971.



I'm Easy! 6Y-E MZ971.

Halifax B.VI, No. 466 R.A.A.F. Squadron, No. 4 Group, Driffield, Yorks, U.K. HD-T RG596. (dual control)



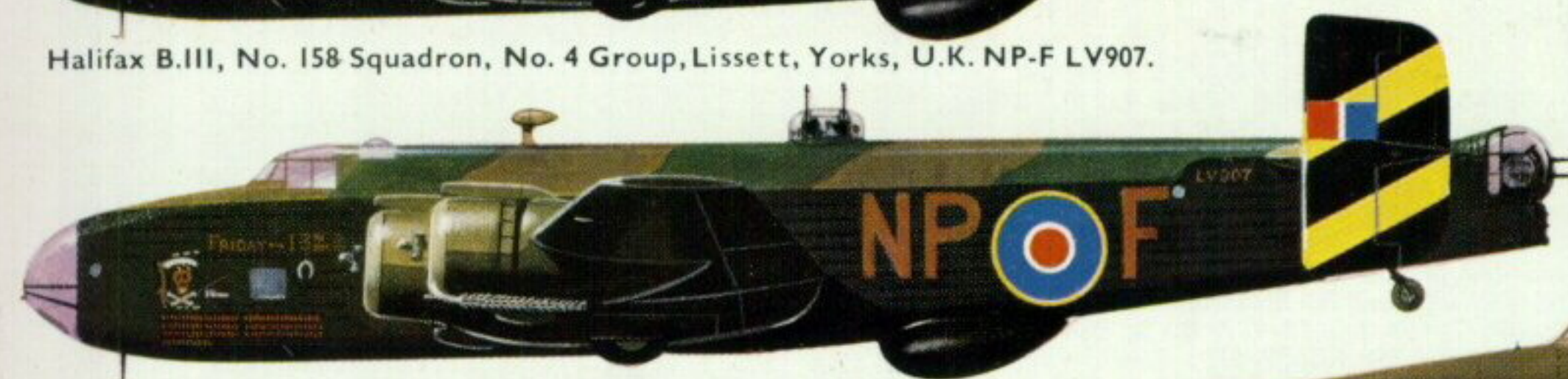
Trixie HD-T RG596.

Halifax B.VI, No. 347 'Tunisie' Squadron, Free French Air Force, Elvington, Yorks, U.K. L8-P NP767.

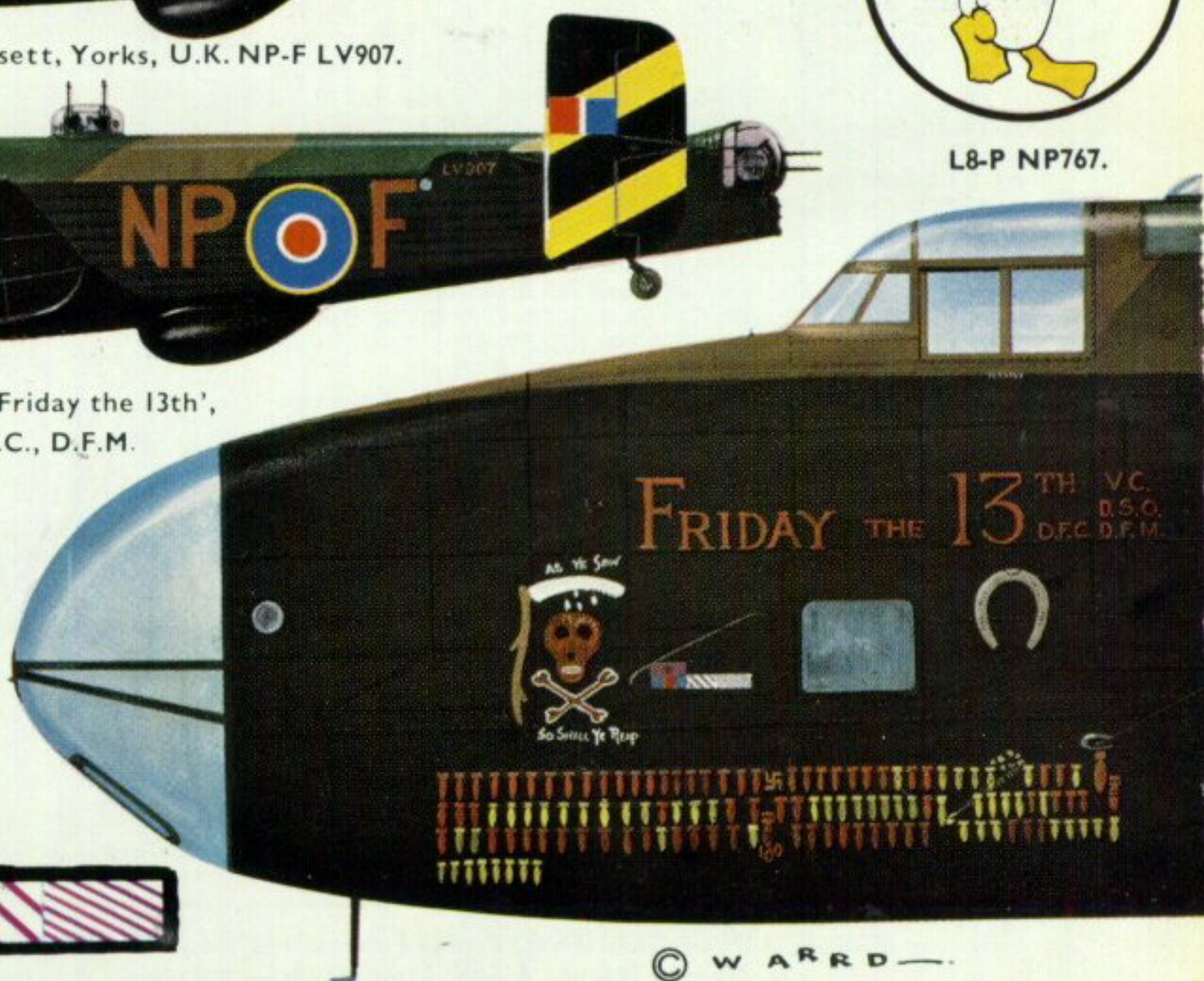


L8-P NP767.

Halifax B.III, No. 158 Squadron, No. 4 Group, Lissett, Yorks, U.K. NP-F LV907.



Nose detail of NP-F 'Friday the 13th',
V.C., D.S.O., D.F.C., D.F.M.



scythe, inverted horseshoe and other unlucky signs painted on it, completed 128 operational sorties by VE Day. On his return from Gelsenkirchen, *Friday's* 100th op. on 22nd/23rd January 1945, F./Lt. Gordon said: "We always feel absolutely confident in her. She flies right and she always get there . . ." *Friday* had by then undergone two major inspections and had 550 flying hours to its credit. It had never been left behind when due for an operation—a record which it maintained throughout the rest of its career.

Three more Halifaxes—all B.IIIs—passed the cen-

tury mark on operations and details of these are as follows:

Serial	Sqdn.	Code and Ident. Letters	Date taken on charge	Op. Sorties
LV937	578	LK-X & 'R'	March 1944	At least 100
	51	MH-J, 'M & 'E	April 1944	
LW587	578	LK-V & 'A'	Feb. 1944	At least 104
MZ527	578	LK-W & 'D'	March 1944	At least 105

The last two of these aircraft did their 100th ops. together—to Kamen on 3rd/4th March 1945. Another Halifax III, LV917, NP-T, 'H & 'C of No. 158 Squadron is known to have flown 99 operations and seems to have had an extra op. "chalked up" on its nose for luck.

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HALIFAX B.III. SPECIFICATION

Powerplants: Four Bristol Hercules XVI radial engines rated at 1,615 h.p. at 2,900 r.p.m. for take-off, 1,675 (5-min. limit) at 4,500 ft. and 1,455 h.p. at 12,000 ft.

Dimensions: Span 99 ft. (later a/c 104 ft. 2 in.); length 71 ft. 7 in.; height 20 ft. 9 in.; wing area 1,250 sq. ft. (later a/c 1,275 sq. ft.).

Weights: Tare, 38,240 lb., max. t/o 65,000 lb., max. landing 55,000 lb. Max. fuel capacity 2,688 Imp. gal.

Performance: (At normal loaded wt.) 278 m.p.h. at 6,000 ft., 282 m.p.h. at 13,500 ft.; most economical cruising speed 215 m.p.h. at 20,000 ft.; range (with 1,150 Imp. gal. and 13,000-lb bomb load) 1,030 mls. (with 1,986 Imp. gal.

and 7,000-lb. bomb load) 1,985 mls.; Service ceiling (normal loaded) 24,000 ft., (max. loaded) 20,000 ft.; initial rate of climb 960 ft./min., time to 20,000 ft., 37.5 min. (max. wt.) 50 min.

Armament: One flexible 0.303 Vickers "K" gas-operated gun with 300 rounds in nose and four 0.303 in. Browning guns with 1,160 r.p.g. in each of Boulton Paul dorsal and tail turrets. Some early a/c had one flexible 0.5 in. Browning gun in a ventral "blister". Max. bomb load 13,000 lb.

Alternative fuselage bomb loads, six 1,000-lb. plus two 2,000-lb., one 8,000-lb., two 4,000-lb., four 2,000-lb., eight 1,000-lb., two 1,500-lb. (mines) plus six 500-lb., or nine 500-lb. bombs, plus six 500-lb. bombs in wing cells.

PRODUCTION

- 101 B.III (H.P.) HX226-247, HX265-296, HX311-357.
 104 B.III (Fairey) LK747-766, LK779-812, LK826-850, LK863-887.
 60. B.III (Rootes) LL543-559, LL573-615.
 225 B.III and 15 B.VII (H.P.) LV771-799, LV813-842, LV857-883, LV898-923, LV935-973, LV985-999, LW113-143, LW157-179, LW191-195, B.III; LW196-210, B.VII (most of these B.VIIIs went to No. 426 (R.C.A.F.) Sqdn.).
 260 B.III (English Electric) LW346-348, LW361-397, LW412-446, LW459-481, LW495-522, LW537-559, LW572-598, LW613-658, LW671-696, LW713-724.
 180 B.III (London Acft. Prodn. Gp.) MZ282-321, MZ334-378, MZ390-435, MZ447-495.
 360 B.III (English Electric) MZ500-544, MZ556-604, MZ617-660, MZ672-717, MZ730-775, MZ787-831, MZ844-883, MZ895-939.
 219 B.III (Rootes) MZ945-989, NA102-150, NA162-205, NA218-263, NA275-309.
 180 B.III (Fairey) NA492-531, NA543-587, NA599-644, NA656-704.
 105 B.VII and 95 B.VI (H.P.) NP681-723, NP736-781, NP793-820, B.VII except for NP715, 748, 752, 753, 758, 760, 762-767; NP821-836, NP849-895, NP908-927 B.VI.
 200 B.III (English Electric) NP930-976, NP988-999, NR113-156, NR169-211, NR225-258, NR271-290.
 42 B.III and 20 (or 21?) B.VII (Fairey) PN167-208, B.III; PN223-242 (and PN343?) B.VII.
 80 B.III (London Acft. Prodn. Gp.) PN365-406, PN423-460.
 37 B.VI (H.P.) PP165-187, PP203-216.
 80 B.III, 20 B.VII and 400 B.VI (English Electric) RG345-390, RG413-446, B.III; RG447-458, RG472-479, B.VII; RG480-513, RG527-568, RG583-625, RG639-679, RG693-736, RG749-790, RG813-853, RG867-879, B.VI.
 25 B.VI and/or G.R.VI (H.P.) ST794-818 (16 of these converted to G.R.VI and 3 others supplied to French Air Force).
 23 B.VII (and A.VII?) (H.P.) TW774-796 (originally allotted serials PP142-164 but re-numbered as these compromised Short Sunderland serials).

HALIFAX B.IIIs, 'VIs AND 'VIIIs IN SERVICE

Examples of aircraft used by operational squadrons.†
 No. 4 Group.

- No. 10 Sqdn., Melbourne: MZ902 'ZA-R' (B.III†, H2S).
 No. 51 Sqdn., Snaith: LL548 'MH-D' (B.III *, v.g.), LK843 'C6-F' (B.III *, no H2S or v.g. 'C' Flt.).
 No. 76 Sqdn., Holme-on-Spalding Moor: NA571 'MP-M' 'Die Fledermaus' (B.III), TW794 'MP-A' (B.VI).

*98 ft. 10 in. span.
 †104 ft. 2 in. span.
 v.g.=ventral gun.

- No. 77 Sqdn., Full Sutton: MZ769 'KN-R' (B.III, H2S), RG531 'KN-R' (B.VI).
 No. 78 Sqdn., Brighton: NP995 'EY-Z' 'Zooloo Mk.II' (B.III) RG662 (B.VI).
 No. 102 Sqdn., Pocklington: LW159 'DY-P' 'Popeye' (B.III), RG485 'DY-J' 'Joanie' (B.VI).
 No. 158 Sqdn., Lissett: MZ373 'NP-O' 'Otophelia, Bert's Bag' (B.III†, H2S), RG644 'NP-R' (B.VI).
 No. 346 (F.A.F.) Sqdn., Elvington: PN170 'H7-C' (B.III), RG495 'H7-A' (B.VI).
 No. 347 (F.A.F.) Sqdn., Elvington: LL573 'L8-B' (B.III *, v.g.), RG669 'L8-G' (B.VI).
 No. 462 (R.A.A.F.) Sqdn., Driffield: NP989 'Z5-F' (B.III).
 No. 466 (R.A.A.F.) Sqdn., Driffield: NR127 'HD-M' (B.III).
 No. 578 Sqdn., Snaith and Burn: LW473 'LK-P' (B.III).
 No. 640 Sqdn., Leconfield: MZ856 'C8-S' (B.III), RG588 'C8-S' (B.VI).

No. 6 (R.C.A.F.) Group:

- No. 408 (Goose) Sqdn., Linton-on-Ouse: MZ904 'EQ-G' (B.III), NP742 'EQ-U' 'Embraceable "U"' B.VII.
 No. 415 (Swordfish) Sqdn., East Moor: LK766 '6U-Q' (B.III *, v.g.), PN240 '6U-W' (B.VII).
 No. 420 (Snowy Owl) Sqdn., Tholthorpe: LW380 'PT-B' 'The Bird of Prey—Achtung Gallopin' Buzzard' (B.III†).
 No. 424 (Tiger) Sqdn., Skipton-on-Swale: HX346 'QB-U' (B.III).
 No. 425 (Alouette) Sqdn., Tholthorpe: MZ425 'KW-U' 'Little Lulu' (B.III, H2S).
 No. 426 (Thunderbird) Sqdn., Linton-on-Ouse: LK880 'OW-C' (B.III) NP740 'OW-C' 'Cowan's Cowards' (B.VII).
 No. 427 (Lion) Sqdn., Leeming: MZ823 'AL-E' 'Tondelayo' (B.III).
 No. 431 (Iroquois) Sqdn., Croft: MZ881 'SE-A' (B.III).
 No. 432 (Leaside) Sqdn., East Moor: LK754 'QO-Z' (B.III), NP774 'QO-Z' 'Overseas Zombie' (B.VII).
 No. 433 (Porcupine) Sqdn., Skipton-on-Swale: MZ883 'BM-S' (B.III).
 No. 434 (Bluenose) Sqdn., Croft: NA522 'IP(?)—U'.

No. 8 (P.F.F.) (Group):

- No. 35 Sqdn., Graveley: HX321 'TL-K' (B.III).

No. 100 (Bomber Support) Group:

- No. 171 Sqdn., North Creak: NA694 '6Y-H' (B.III).
 No. 192 Sqdn., Foulsham: MZ817 'DT-Q' (B.III).
 No. 199 Sqdn., North Creak: PN374 'EX-N' (B.III).
 No. 462 (R.A.A.F.) Sqdn., Foulsham: MZ306 'Z5-X' (B.III).

†In addition to the squadrons, many Halifaxes served at Heavy Conversion Units, the Bomber Command Instructors' School, and other training units.